IQA Implementation Observation Tool

A ↑ The lesson **provides** opportunities for students to engage with high-level cognitive demand.	**B** ↓ The lesson **does not provide** opportunities for students to engage with high-level cognitive demand.
• Students: ○ Engage with the task in ways that address the teacher's goals for high-level thinking and reasoning ○ Communicate mathematically with peers ○ Have appropriate prior knowledge to engage with the task ○ Have opportunities to serve as mathematical authorities in the classroom ○ Have access to resources that support their engagement with the task • The teacher: ○ Supports students to engage with the high-level demands of the task while maintaining the challenge of the task ○ Provides sufficient time to grapple with the demanding aspects of the task and to expand thinking and reasoning ○ Holds students accountable for high-level products and processes ○ Provides consistent requests for explanation and meaning ○ Provides students with sufficient modeling of high-level performance on the task ○ Provides encouragement for students to make conceptual connections	• The task: ○ Expectations are not clear enough to promote students' engagement with the high-level demands of the task ○ Is not rigorous enough to support or sustain student engagement in high-level thinking ○ Is too complex to sustain student engagement in high-level thinking (Students do not have the prior knowledge necessary to engage with the task at a high level.) • The teacher: ○ Allows classroom management problems to interfere with students' opportunities to engage in high-level thinking ○ Provides a set procedure for solving the task ○ Shifts the focus to procedural aspects of the task or on correctness of the answer rather than on meaning and understanding ○ Gives feedback, modeling, or examples that are too directive or do not leave any complex thinking for the student ○ Does not press students or hold them accountable for high-level products and processes or for explanations and meaning ○ Does not give students enough time to deeply engage with the task or to complete the task to the extent that is expected ○ Does not provide students access to resources necessary to engage with the task at a high level

C The **discussion** provides opportunities for students to engage with the high-level demands of the task.
Students: • Use multiple strategies and make explicit connections or comparisons between these strategies, or explain why they chose one strategy over another • Use or discuss multiple representations and make connections between different representations or between the representation and their strategy, underlying mathematical ideas, or the context of the problem • Identify patterns or make conjectures, predictions, or estimates that are well grounded in underlying mathematical concepts or evidence • Generate evidence to test their conjectures and use this evidence to generalize mathematical relationships, properties, formulas, or procedures • Determine the validity of answers, strategies, or ideas rather than waiting for the teacher to do so

Source: Adapted from Boston, 2017.